TROITSKIY, V. F.

AKHMEDOV, M.I.; TROITSKIY, V.F.

Effective cooperation of oil field workers and scientists. Azerb.neft. khoz. 35 no.10:45 O '56. (MLRA 10:1)
(Oil wells--Equipment and supplies)

MAMEDOV, N.Ya.; KADYMOVA, K.S.; TROITSKIY, V.F.

Checking the accuracy of diagrams obtained in remote dynamometry.
Azerb. neft. khoz. 38 no.5:24-27 My '59. (MIRA 12:9)
(Dynamometer) (Remote control)

TROITSKIY, V.F.

Calculating friction force in directional wells. Trudy AzNII DN no.6:152-158 '57. (MIRA 12:12)
(Friction)

TROITSKIY, V.F.; ADONIN, A.N.

Equipment depletion in directionally drilled wells. Dokl.AN Arm. SSR 24 no.2:14-17 '57. (MLRA 10:4)

1. Sotrudniki Azerbaydzhanskogo nauchno-issledovatel'skogo instituta po dobyche.

(Oil wells--Equipment and supples)

ADONIN, Anatoliy Nikiforovich; KADYMOVA, Kamilya Sulayman kyzy; TROITSKIY, Vitaliy Fedosovich; AMIROV, A.D., redaktor; SHTEYNGEL', A.S., redaktor izdatel'stva.

[Experience in using gas anchors] Opyt primeneniia gazovykh iakorei. Baku, Azerbaidzhanskoe gos.izd-vo neft. i nauchno-tekhn.lit-ry, 1956. 53 p. (MLRA 10:9)
(Oil well pumps)

TROITSKIY, V.F.; SAZONOV, V.V.

Gas anchor. Azerb.neft.khoz. 35 no.3:12-14 Mr '56.
(MLRA 9:10)

(Oil well pumps)

TROITSKIY, V.F.

Calculating friction forces in directional wells. Trudy AzNII DN no.10:415-422 '60. (MIRA 14:4)

(Friction)

TROITSKIY, Vitaliy Feodosovich; PROK, I.Yu., red.; RASHEVSKAYA, T.A., red. izd-va; TOROSYAN, R., tekhn. red.

[Operation of deep well pumps under complicated exploitation conditions] Rabota glubinnonasosnoi ustanovki v oslozhnennykh usloviiakh ekspluatatsii. Baku, Azerbaidzhanskoe gos. izd-vo, 1962. 83 p. (MIRA 15:8)

(Oil wells--Equipment and supplies)
(Pumping machinery)

TROITSKIY, V.I.

Oblique bedding of the upper Jurassic littoral and marine sediments in southeastern Uzbekistan. Izv. AN SSSR. Ser. geol. 24 no.6:106-107 Je '60. (MIRA 14:4)

1. Glavnoye upravleniye po okhrane nedr pri Sovete Ministrov UzSSR, Tashkent.
(Uzbekistan--Sediments (Geology))

STANKEVICH, Yu.V.; TROITSKIY, V.I.

Types of Jurassic sections in the southwestern spurs of the Gissar Range. Uch.zap. SAIGIMSa no.7:3-10 '62. (MIRA 17:2)

1. Tashkentskiy gosudarstvennyy universitet.

TROITSKIY, V.I.

Processes of authigenic mineralization in lower Mesozoic formations in southern Uzbekistan. Uzb. geol. zhur. no.2:58-65 '61. (MIRA 14:5)

1. Glavgeologiya UzSSR.
(Uzbekistan—Mineralogy)

SHAPIRO, Ye.A.; ZHUKOVSKIY, Ye.S.; MUSTAFABEKOVA, A.A.; MIKHAYLOV, N.D.; KOBYLYANSKIY, A.E.; KONONYKHIN, A.G.; EPSHTEYN, R.R.; KARPINSKIY, V.F.; DAVYDOVA, R.T.; TROITSKIY, V.I., red.; GOR'KOVA, A.A., vedushchiy red.; FEDOTOVA, I.G., tekhn.red.

[Establishing standards for material consumption and stocks in the petroleum industry] Normirovanie raskhoda i proizvodstvennykh zapasov osnovnykh materialov v neftianoi promyshlennosti. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1959. 252 p. (MIRA 12:12)

(Petroleum industry--Standards)

TROITSKIY, V.I.

Paleogeography of the Tajik Depression in Jurassic times. Izv. Otd. geol.-khim. i tekh. nauk AN Tadzh. SSR No.1:87-92 '61. (MIRA 14:9)

(Tajikistan--Geology, Stratigraphic)

TROITSKIY, V.I.

First Scientific Technological Conference on Welding in the Kazakh S.S.R. Avtom. svar. 15 no.12:87-88 D '62. (MIRA 16:2)
(Welding—Congresses)

POLYAKOV, V.N.; NOSOVIL'SKIY, M.S.; TROITSKIY, V.I.

Geology of folded basement in the southern part of the Aral Sea region. Uzb. geol. zhur. 9 no.3:12-19 '65. (MIRA 18:8)

1. Gosudarstvennyy geologicheskiy komitet UzSSR.

TROITSKIY, V.I.

Relationship between the humid and arid sedimentation in the Lower Mesozoic of the Tajik Depression. Trudy Uz. geol. upr. no.2:53-57 '62. (MIRA 16:8)

(Tajik Depression--Geology, Stratigraphic)

TROITSKIY, V.I.

New data on the composition and conditions governing the accumulation of the Upper Jurassic carbonate formation in the southern part of Uzbekistan. Trudy Uz. geol. upr. no.2:59-63 '62. (MIRA 16:8)
(Uzbekistan--Rocks, Carbonate)

KOCHNEV, Ye.A.; TROITSKIY, V.I.

Interpretation of the results of spectrum analyses. Trudy Uz. geol. upr. no.2:75-78 '62. (MIRA 16:8)
(Uzbekistan--Chemical elements--Spectra)

STANKEVICH, Yu.V.; TROITSKIY, V.I.

Tectonic development of southern Uzbekistan in the Middle Mesozoic. Trudy Uz. geol. upr. no.2:42-47 '62. (MIRA 16:8)
(Uzbekistan--Geology, Structural)

TROITSKIY, V.K.

5(2); 21(5) PHASE I BOOK EXPLOITATION SOV/1900

Akademiya nauk SSSR. Komissiya po analiticheskoy khimii

Primeneniye radioaktivnykh izotopov v analiticheskoy khimii (Use of Radioactive Isotopes in Analytical Chemistry) Moscow Izd-vo AN SSSR, 1958. 366 p. [Series: Its: Trudy, t. 9 (12)] Errata slip inserted. 3,000 copies printed.

Resp. Ed.: I.P. Alimarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.N. Yermakov; Tech. Ed.: T.V. Polyakova.

PURPOSE: The book is intended for chemists and chemical engineers concerned with work in analytical chemistry.

COVERAGE: The book is a collection of the principal papers presented in Moscow at the Second Conference on the Use of Radioactive Isotopes. The problems discussed at the Conference included coprecipitation, aging, and solubility of precipitates, determination of the instability constants

Card 1/10

of complex compounds, separation of rare earth metals, and ion-exchange chromatography. No personalities are mentioned. There are 351 references, 175 of which are Soviet, 33 German, 19 French, 8 Swedish, 2 Hungarian, and 2 Czech.

TABLE OF CONTENTS:

Use of Radioactive Isotopes (Cont.) SOV/1900

Card 6/10

DECEASED

1964

TROITSKIY, V. L.

c. '63

Immunology
Radiology

TROITSKIY, V. M.

Carotin

Carotin content of fodder plants. Korm. baza. 3, No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, May 1952. UNCLASSIFIED.

TROITSKIY, V. M.

Feeding and Feeding Stuffs - Analysis

Carotin content of fodder plants. V. M. Troitskiy. Korm. baza, 3, no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, April 1952. UNCLASSIFIED.

TROITSKIY, V.N.; NAKHAYEV, N.Ye.; SMORODIN, A.I.; BEREMBLYUM, G.B.

Causes for the breakdown of air preheaters. Metallurg 8 no.8: 11-12 Ag '63. (MIRA 16:10)

1. Novolipetskiy metallurgicheskiy zavod.

TROITSKIY, V.N.

3(5) PHASE I BOOK EXPLOITATION SOV/2544

Savinskiy, Konstantin Aleksandrovich, Mark Mironovich Mandel'baum, Vsevolod Nikolayevich Troitskiy, Naum Iosifovich Shekht, and Nikolay Pavlovich D'yachkov

Effektivnost' geofizicheskikh metodov razvedki v yuzhnoy chasti Sibirskoy platformy, vpadinakh Zabaykal'ya i Dal'nego Vostoka (Efficacy of the Geophysical Methods of Prospecting in the Southern Part of the Siberian Platform, and in the Transbaykal and Far East Depressions) Moscow, Gostoptekhizdat, 1959. 114 p. 2,900 copies printed.

Sponsoring Agency: Glavgeologiya RSFSR. Vostsibnefteteofizika.

Ed.: V. G. Vasil'yev; Exec. Ed.: Ye. G. Pershina; Tech. Ed.: I. G. Fedotova.

PURPOSE: This book is intended for geophysicists, geologists, petroleum geologists, and area specialists interested in the Siberian region.

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COVERAGE: The book contains the results of geophysical explorations carried out in the southern part of the Siberian platform and in the depressions of Zabaykal'ye and Zeye-Bureinskaya. Questions in the methodology of geophysical studies are examined and suggestions are made on the direction and content of future work in Eastern Siberia. Oil- and gas-bearing possibilities of the region are discussed with an eye to future economic growth. The southern part of the Siberian platform, the so-called Irkutskiy amphitheater, is cited as being particularly favored in the economic sense. Materials collected in the field are used in the work. No personalities are mentioned. There are 59 references, all Soviet.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

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MM/jb
11-2-59

TROITSKII, V.N.

Journal of the Science
Of Food and Agriculture
March 1954
Foods

Origin of sesquioxides in scale on [sugar juice] evaporators. V. N. Troitskii (*Sakhar. Prom.*, 1953, No. 6, 18—19; *Sug. Ind. Abstr.*, 1953, 15, 159.)—The insol. residue from first-body evaporator scale, after extraction with water and aq. NH_4Cl, contains SiO_2 (8·11), MgO (10·81), sesquioxides (27·04), and org. matter (54·04%). Presumably the SiO_2 and MgO are present entirely as Mg_2SiO_4, and the sesquioxides are united with the org. matter. Scales from all evaporators in three factories contained Fe_2O_3 (1—9) and Al_2O_3 up to (27·7%). Evaporators with both Fe and brass tubes yielded scale containing up to 22% of Fe_2O_3. P. S. ARUP.

Central Sci. Res. Inst. Sugar Industry

PRITULA, Yu.A.; SAVINSKIY, K.A.; MANDEL'BAUM, M.M.; TROITSKIY, V.N.

Means for a practical solution of the problem of oil and gas potentials of the southern part of the Siberian Platform. Geol. nefti 2 no.4:5-11 Ap '58. (MIRA 11:5)

1. Vostsibneftegeofizika.
(Siberian Platform--Petroleum geology)
(Siberian Platform--Gas, Natural--Geology)

TROITSKIY, V.N.

AID P - 4236

Subject : USSR/Radio Engineering

Card 1/2 Pub. 90 - 2/8

Author : Troitskiy, V. N.

Title : Reflection of microwaves from heterogeneous layers of the troposphere.

Periodical : Radiotekhnika, v. 11, no. 1, 7-16, Ja 1956

Abstract : The author examines the various factors affecting dielectric transition and creating deviation layers in the troposphere meterological factors. Changes in temperature and humidity and also earth gravitation and ground irregularities are the main factors influencing the dielectric constants of the media and creating layers in the atmosphere which cause reflection of radio waves. Such reflection was observed even at normal incidence of radar sounding. The author presents formulae for the determination of reflection coefficients at inclined incidence and discusses the influence of reflection on the propagation of microwaves. Four diagrams, 7 references (3 Soviet) (1933-1954).

AID P - 4236

Radiotekhnika, v. 11, no. 1, 7-16, Ja 1956

Card 2/2 Pub. 90 - 2/8

Institution : None

Submitted : S 13, 1955

TROITSKIY, V.N.

CARD 1 / 2 PA - 1315

SUBJECT USSR / PHYSICS
AUTHOR TROICKIJ, V.N.
TITLE The Propagation of Ultrashort Waves at Great Distances Beyond the Horizon.
PERIODICAL Radiotechnika, 11, fasc. 5, 3-20 (1956)
Issued: 6 / 1956 reviewed: 9 / 1956

Here the tropospheric propagation of ultrashort waves is studied under the assumption that phenomenon is due to laminary and turbulent properties of After corresponding experimental data had been collected it became clear that, besides irregular "voltage jumps" of the field of ultrashort waves at great distances (beyond direct visibility) there exists in quite a regular manner a certain and rather constant level of the field strength. Though this level is low, it surpasses many times the level predicted by the diffraction theory. The theories of the scattering of ultrashort waves assumed the atmosphere to be homogeneous and isotropic, but neither is the case. The atmosphere is anisotropic even in low altitudes with respect to inhomogeneities of ε . In the case of the small angles of irradiation occurring in practice the vertical inhomogeneities play the most important part in connection with the propagation of ultrashort waves over long distances. The pulsations of ε are represented with the help of chance functions. There follows the determination of the average field strength which is produced by the inhomogeneities beyond direct visibility. The field strength depends only little on the wave length and also only little on altitude. The latter

is the case particularly for long distances.

On the stability of field strength: The total field is created by the superposition of very many waves with chaotically changing phases. The amplitude of the total field then obeys RALEIGH'S distribution. The "period of solidification" is proportional to the wave length and inversely proportional to drive velocity and the distance up to the point of reception.

On the distortions of the signal: The average value of the field strength of the reflected wave depends only little on frequency, but on the occasion of the transmission of the signal distortions nevertheless occur. The principal distortions are due to the fact that at the place of reception waves with different distortions arrive. Besides, the theorem of KOLMOGOROV-OBUCHOV holds good only for the average values of $\Delta \varepsilon$. The distortions connected with rapid "solidification" need not play an important part.

Comparison of the results obtained with experimental data: The experimental data concerning the field strength of ultrashort waves and their dependence on altitude agree well with theoretical dependence.

In the appendix the inhomogeneities of the dielectricity constant of the earth-near stratum of air are discussed.

INSTITUTION:

TROITSKIY, V.N.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1490
AUTHOR TROICKIJ,V.N.
TITLE On the Possible Transmission Zone for the Case of a Distant Tropospheric Propagation.
PERIODICAL Radiotechnika, 11, fasc. 9, 3-7 (1956)
Issued: 10 / 1956 reviewed: 11 / 1956

For practical purposes it is of importance to determine that width of zone of the spectrum which it is possible to transmit without distortions in the case of a tropospheric propagation. The basic cause of such distortions is due to the fact that the field forms numerous waves at the point of reception, the propagation times of which differ because of the different lengths of path. As already shown by the author's work in Radiotechnika, 11, fasc.5, 1956, the field of a tropospheric wave can be represented as a superposition of the individual reflected waves of the inhomogeneities of different orders if the fact is taken into account that the troposphere is really anisotropic and that the horizontal inhomogeneities of the dielectric constant are less than the vertical ones. Here we have to do with the uninterrupted spectrum of these inhomogeneities, which is determined by the KOLMOGOROV-OBUHOV theorem. The author gives formulae for the determination of that zone of the spectrum which can be transmitted without distortions. From these formulae it may be seen that this zone depends largely on distance. In real cases and in the case of a length of from 200 to 300 km this zone is very wide. It must, however, be pointed out that these

Radiotechnika, 11, fasc.9, 3-7 (1956)

conclusions apply in the case of medium conditions, for only in such a case may the KOLMOGOROV character of the spectrum be described as justified. In individual moments of time the spectrum of the inhomogeneities differs considerably from that of KOLMOGOROV.

INSTITUTION:

109-2-1-5/17

AUTHOR: Troitskiy, V. N.

TITLE: Effect of the Form of Structural Function of Air-Permittivity Inhomogeneities on the Long-Distance Tropospheric Propagation of Ultrashort Radio Waves (O vliyanii formy strukturnoy funktsii neodnorodnostey dielektricheskoy pronitsayemosti vozdukha na dal'neye troposfernoye rasprostraneniye ul'trakorotkikh voln)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol 2, Nr 1, pp 34-37 (USSR)

ABSTRACT: Field strength for long-distance tropospheric ultrashort-wave propagation has been determined with the assumption that the structural function of air permittivity has Kolmogorov's form. This function has a different form on the assumption that air is compressible under turbulent movements and that the processes transpire adiabatically. In cases of stratified inhomogeneities caused by inversions, clouds and other phenomena, the form of structural function may be different from the above two. Thus, the form of the structural function is not constant and, hence, it is interesting to consider the effect of the form of structural function on the field of ultrashort waves. The author has found mathematical expressions for the median value of the field strength and

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Effect of the Form of Structural Function of Air-Permittivity Inhomogeneities (Cont.)

for possible transmission bands. The effect of the form of structural function on the value of field strength and the magnitude of distortion is analyzed. It is pointed out that the form of structural function has only a slight effect on the magnitude of field strength but has a pronounced effect on the magnitude of distortion.

There are two figures and six references, four of which are Soviet, in the article.

SUBMITTED: June 14, 1956

AVAILABLE: Library of Congress

1. Radio waves--Propagation 2. Upper atmosphere--Reflective effects
4. Atmosphere--Dielectric properties

TROITSKIY, V.N.

Effect of antenna direction in long-distance tropospheric propagation of ultra-short waves. Elektrosviaz' 11 no.1:21-23 Ja '57.
(MLRA 10:2)

(Radio, Shortwave)

TROITSKIY, V.N.

Fading of ultrashort waves in radio relay lines. Elektrosviaz' 11 no.10:32-39 O '57. (MIRA 10:10)
(Radio relay systems)

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S/109/60/005/012/007/035
E192/E482

AUTHOR: Troitskiy, V.N.

TITLE: Propagation of Cemtimetre Waves Over Long Mountainous Paths

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.12, pp.1919-1924

TEXT: This is an experimental study of fading at centimetre wavelengths over mountainous paths up to 200 km. The paths were such that waves reflected from the surface of the earth were absent. The fading observed must therefore be explained by reflection and refraction in atmospheric inhomogeneities. In the author's opinion, the most probable cause of fading on these paths is attenuation in passage through inhomogeneities for which conditions close to total internal reflection are satisfied. The measurements were carried out in the period July-September 1958 and August-September 1959 by the Research Institute of the Ministry of Communications (USSR) at wavelength λ = 15 cm, in Kirghizia and Uzbekistan. Three paths were observed and continuous 24-hour records were taken of signal strength on the three paths simultaneously. A total of 4500 hours of records were processed.

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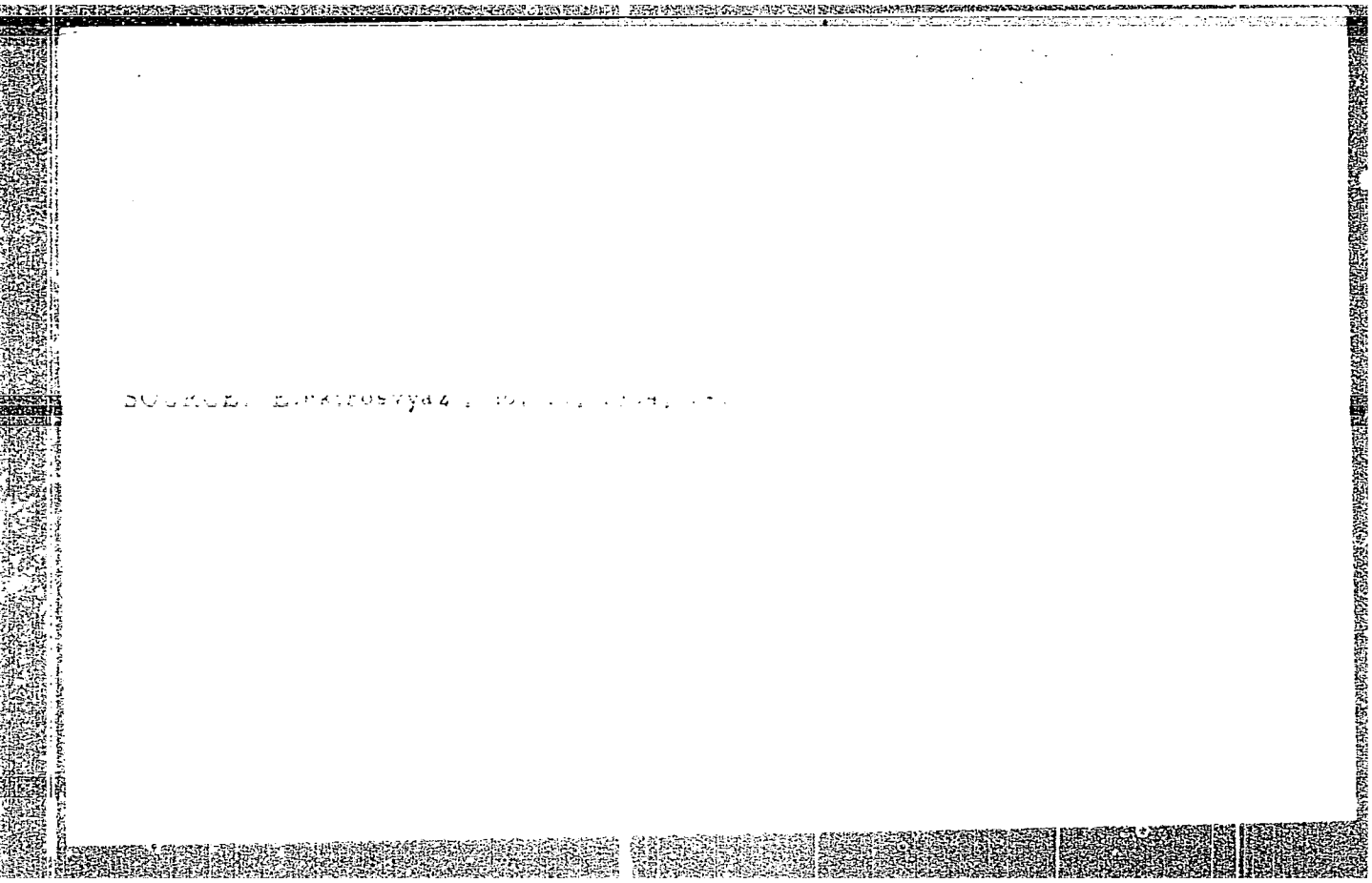
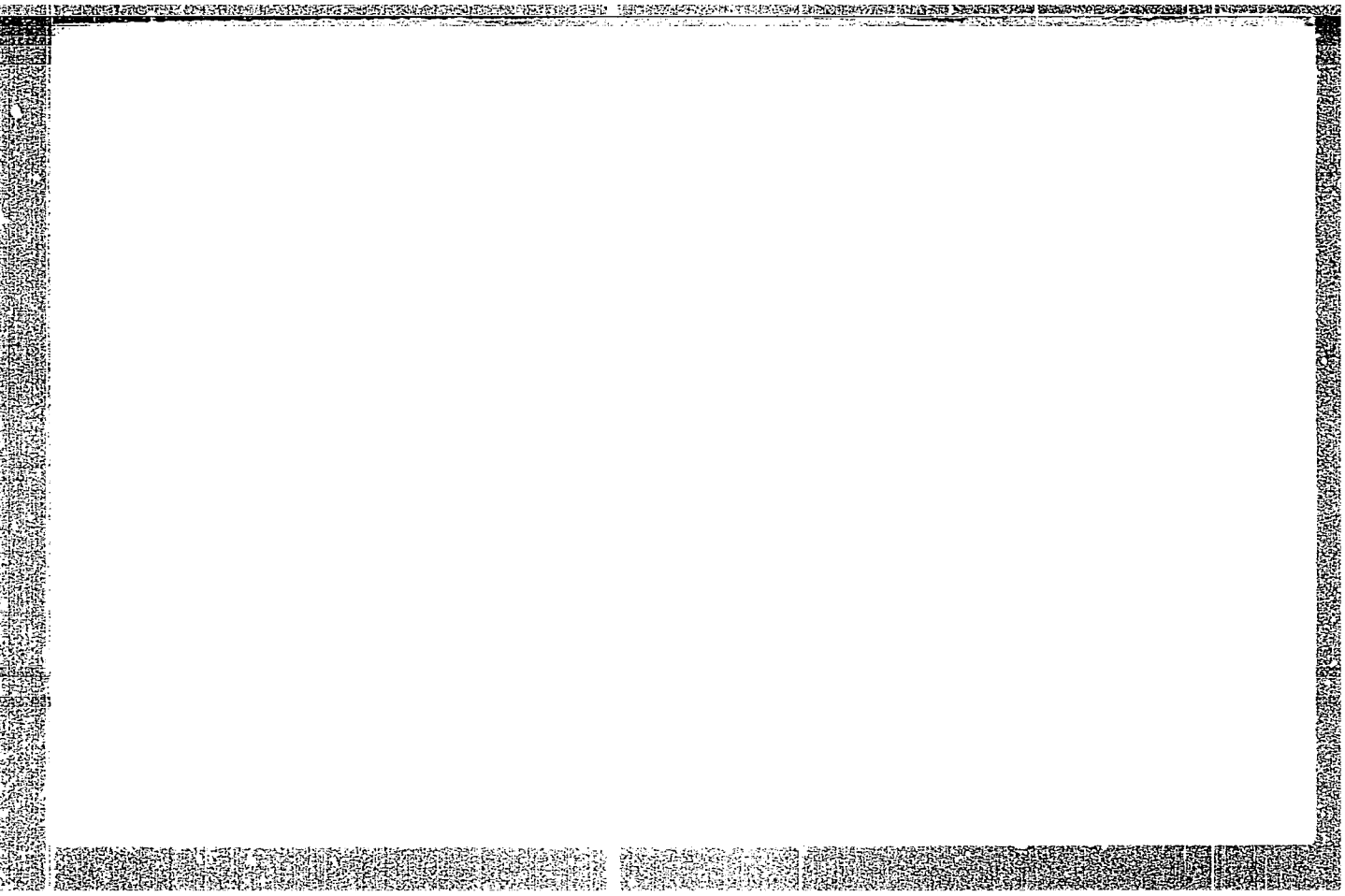
Integral curves of field intensity distribution were plotted for 3-hour intervals, which were then plotted for monthly variation and the variation over the total period of observation. Fairly deep fading was observed on all three paths, of a relatively slow character. The fading period varied from several minutes to several hours. Shallow fading with a period of several seconds was sometimes observed. The median field intensity was 3 to 6 db below the free space value. The field intensity on all three channels was subject to a normal-logarithmic law down to the lowest levels, whereas if interference fading was involved there would be at least at the lowest level a Rayleigh law. The depth of fading up to 160 km is not too serious to permit use of the paths. The nature of the fading is also more favourable than on level paths. It is expected that the same type of fading will be observed with long-distance tropospheric propagation of UHF. There are 9 figures and 1 Soviet reference.

SUBMITTED: April 7, 1960

Card 2/2





APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001756720003-0"

ACCESSION NR: AP4042500 S/0106/64/000/007/0001/0012

AUTHOR: Kalinin, A. I.; Troitskiy, V. N.; Shur, A. A.

TITLE: Statistical characteristic of a signal during long-range propagation of ultrashort waves

SOURCE: Elektrosvyaz', no. 7, 1964, 1-12

TOPIC TAGS: tropospheric wave attenuation, slow signal fading, signal statistical characteristic, wide band transmission, spacial correlation radius, frequency correlation radius, fading statistical distribution

ABSTRACT: The results are presented of an investigation of long-range tropospheric propagation. Measurements were made at 30—40-cm wavelengths along routes 159, 303, 448, 630, and 730 km in length and at 8—9-cm wavelengths along routes 85, 205, and 303 km in length. Receiver-transmitter equipment and antennas used made it possible to measure the attenuation factor V = -118 db for the 30—40-cm wavelength along the 730 km route and V = -106 db for the 8 to 9-cm wavelength along the 303 km route. The error of measuring signal-level values did not exceed ±1.5 db. According to the experiments,

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ACCESSION NR: AP4042500

many statistical characteristics of the signal during the tropospheric propagation at a distance of 450—730 km appear to be more favorable than has been assumed. Dispersion of the statistical distribution of slow fadings appears considerably less than at a distance of 300 km. The radius of spatial correlation increases with the distance; therefore, it may be assumed that losses in antenna gain will not increase at long distances and may even decrease. The radius of frequency correlation by which the undistorted transmission band is defined does not drop with distance. This shows the possibility of accomplishing wide-band long-distance transmissions. Orig. art. has: 17 figures.

ASSOCIATION: none

SUBMITTED: 06Jul63 ATD PRESS: 3065 ENCL: 00

SUB CODE: EC NO REF SOV: 000 OTHER: 003

2/2
Card

ACCESSION NR: AP4043714 S/0106/64/000/008/0009/0016

AUTHOR: Troitskiy, V. N.

TITLE: Investigation of group-delay fluctuation in long-distance tropospheric propagation

SOURCE: Elektrosvyaz', no. 8, 1964, 9-16

TOPIC TAGS: radio wave propagation, tropospheric radio wave, tropospheric radio wave propagation, tropospheric scatter

ABSTRACT: The results of an experimental investigation of the delay fluctuation in a 30-km-long path at 1,000 Mc are reported. Formulas establishing a connection between the group delay and the individual-component delay as well as describing component amplitudes are given. The delay measurements were carried out in the winters of 1961, 1962, and 1963, and in the summer of 1962; measurements were made in sessions, each session lasting ten minutes.

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ACCESSION NR: AP4043714

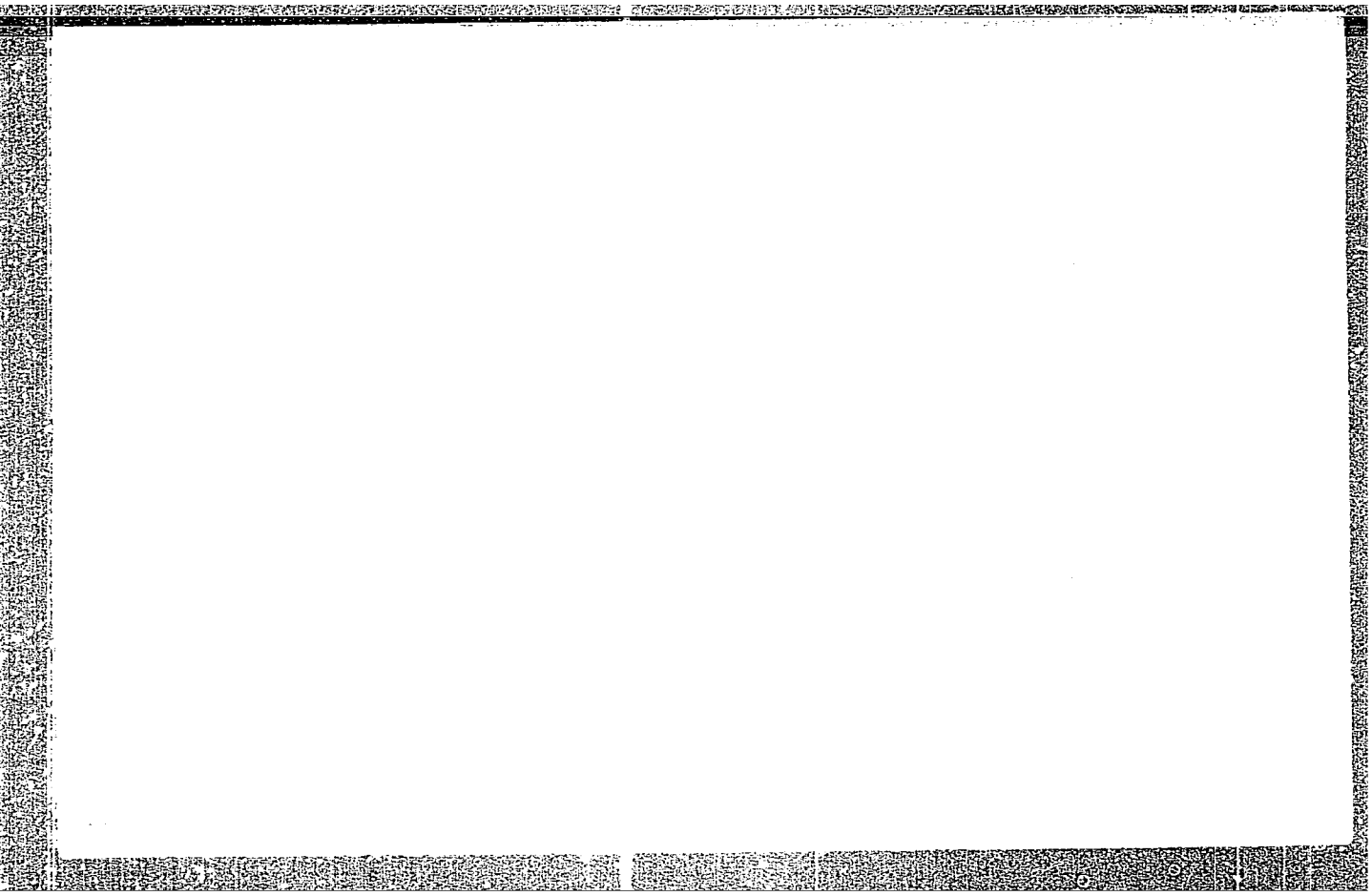
Statistically processed records showed that the fluctuation duration corresponds to that of fast fading, and that the fluctuation range is not wide. Integral distribution curves, in their middle part, are close to the normal law with a mean square deviation of 50 (winter) or 80 (summer) nanosec. The real "volume of reradiation" is found to be considerably smaller than that estimated on the assumption of an incoherent scatter. With the frequency sweeped within 4--5 Mc, the delay fluctuation is considerably smaller than a single-frequency fluctuation. This is apparently explained by the fact that the shift of the reradiation center is much smaller than the reradiation volume proper. Also, delay-frequency characteristics and the effect of slewing an antenna in the vertical plane are reported. Orig. art. has: 5 figures and 32 formulas.

ASSOCIATION: none

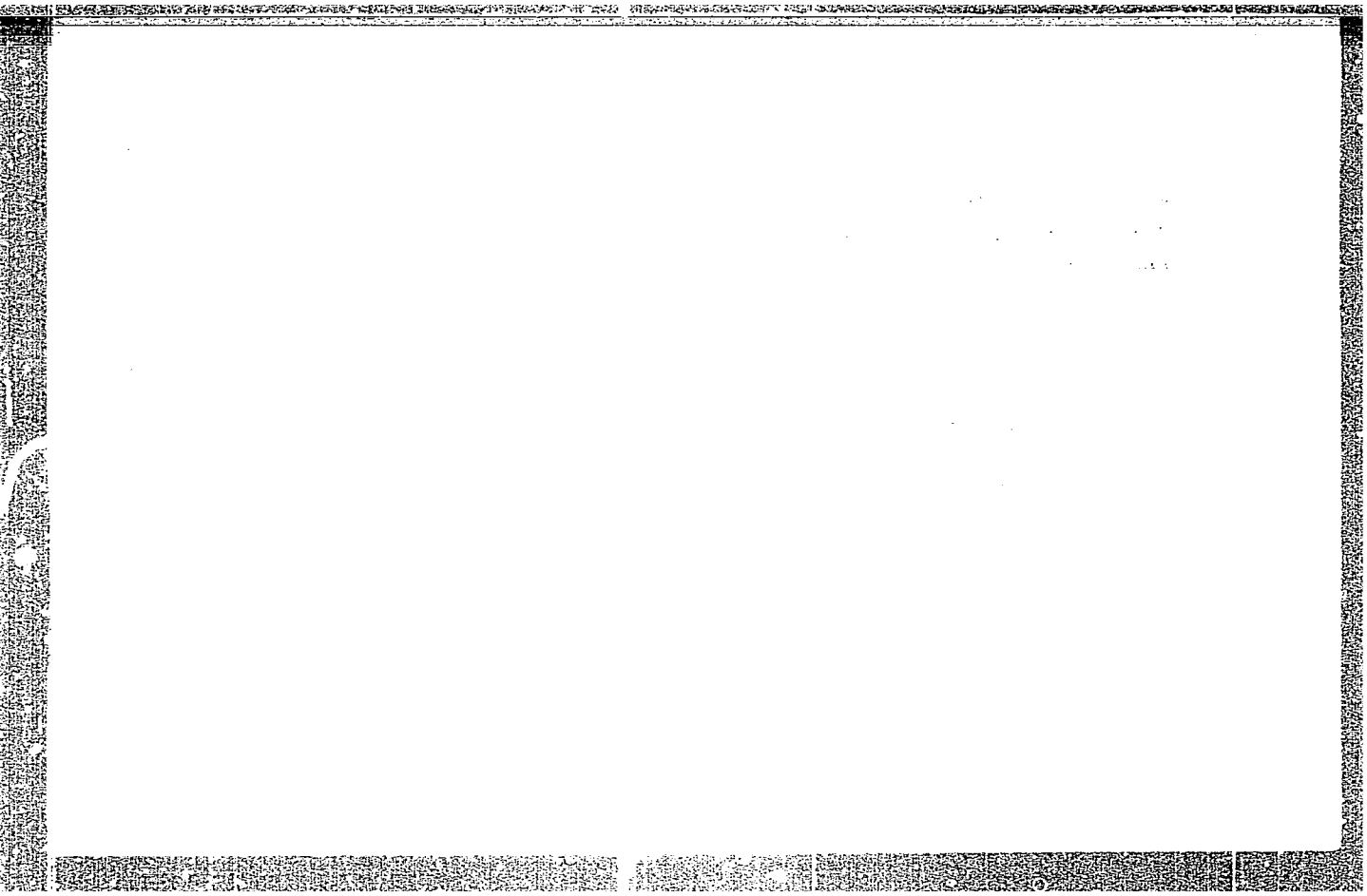
SUBMITTED: 09Mar64 ENCL: 00

SUB CODE: EC NO REF SOV: 001 OTHER: 000

Card 2/2



APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001756720003-0"



APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001756720003-0"

TROITSKIY, V.N.

Study of the attenuation and fading of microwaves in long overhead relay links. Elektrosviaz' 19 no.10:1-8 O '65. (MIRA 18:12)

1. Submitted Sept. 15, 1964.

L 42076-66 EWT(d)/FSS-2 HB

ACC NR: AP6011662 SOURCE CODE: UR/0106/66/000/004/0001/0007

AUTHOR: Nadenenko, L. V.; Troitskiy, V. N.

ORG: none

TITLE: Use of passive repeaters of the diffraction-lens type for radio relay lines with ordinary spacing

SOURCE: Elektrosvyaz', no. 4, 1966, 1-7

TOPIC TAGS: microwave relay, microwave communication, microwave attenuator, electromagnetic wave diffraction, microwave antenna, electric component

ABSTRACT: Two previous articles in the FSB by V. N. Troitsky and coworkers have discussed the theory and experimental results of mounting metallic diffraction lens grids on mountain peaks in order to lessen the otherwise severe attenuation of an impinging microwave signal. Data from several microwave links in mountainous areas showed a substantial reduction in signal loss when a lens of the proper geometry was placed on an intervening peak.

In further studies of this technique, the present authors have examined the effects of passive lens repeaters in more moderate terrain, described only as a forest-steppe region in western USSR. A profile of the test path is shown in Fig. 1. Transmitting and receiving antennas

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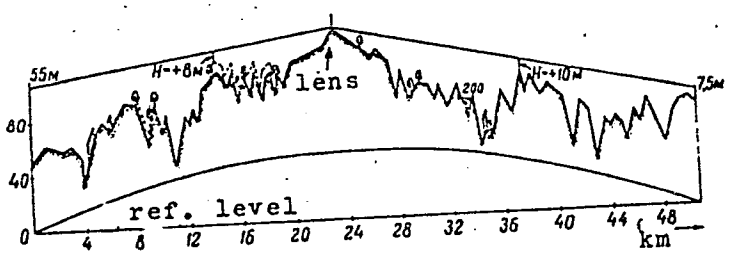

Fig. 1. Transmission path profile

were approximately 50 km apart; the intervening terrain was a hilly region with a dominant peak about halfway in between. Transmitter and receiver were at heights of 55 m and 7.5 m, respectively, and operated on a wavelength of 8.4 cm. The lens chosen for the peak was 55 m wide and 8.5 m high at its center maximum, and was fabricated from grid sections having a 10 x 10 mm mesh. Fig. 2 shows the construction.

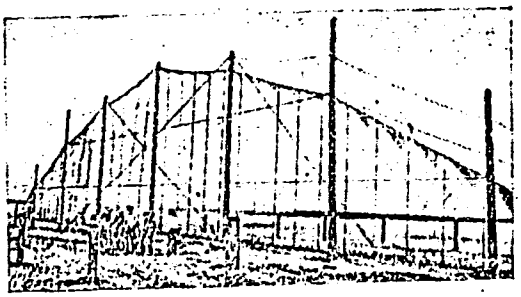

Fig. 2. Lens construction

As a control, two additional microwave lines with active repeaters were set up over similar terrain, also with roughly 50 km separation between stations. All three of the links were operated simultaneously during the summer months of 1963 and 1964, and for extended periods the received signals were recorded around the clock. More than 2000 hours of recording were made for the passive link alone during this time. The main intent of the program was to assess the effectiveness of the lens in reducing attenuation, and to compare the frequency and severity of signal fades in the passive and active links. Variations in lens con-

figuration were tried to determine the effect on these two criteria; for example, the lens was dismantled a section at time while the signal was monitored for discrete changes. When the lens had been completely removed, signal attenuation had increased by 6—8 db, which agreed with calculations.

Recordings from the passive link showed that fades tended to be mostly of a relatively slow type (on the order of minutes) and appeared often in the early morning hours. These effects are seen in the sample recording shown in Fig. 3.

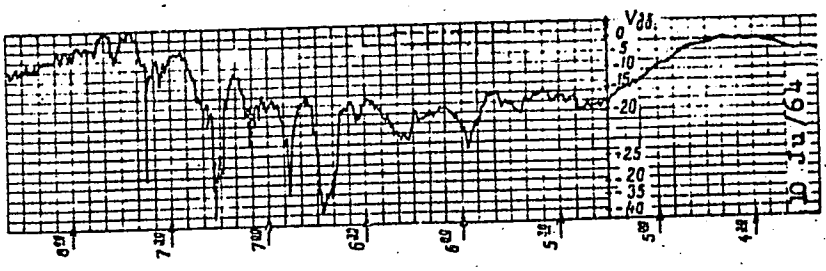

Fig. 3. Passive link signal

L 42076-66
ACC NR: AP6011662

Slow fades of the same type were also noted in the two active systems, although they tended to be somewhat offset in time from those of the passive system. A significant difference cited by the authors was that sharply pronounced fades, such as these caused by local tropospheric discontinuities, were rarely seen in the passive link but frequently occurred in the active ones. The explanation offered for this is that the glancing angle with the inversion layer was larger in the case of the passive link, which resulted in a smaller coefficient of refraction, hence, presumably less susceptibility to fade spikes. Some distribution functions of fade depths are presented for the passive link, covering a range from -22 to -32 db. These data show that the mean fade periods fell within the range of 8—30 sec. In order of magnitude, this was the same as for the two active links.

The authors conclude that a diffraction lens repeater can improve the attenuation characteristic well enough that it should be considered in some cases as a replacement for an active repeater station. They emphasize also that for equal intervals between stations, the stability of the passive system is as good as that of active systems. [FSB: v. 2, no. 7]

SUB CODE: 17 / SUBM DATE: 24Dec64 / ORIG REF: 002

Card 5/5

ACC NR: AP6030566 SOURCE CODE: UR/0413/66/000/[illegible]

INVENTOR: Bliznyuk, N. K.; Khokhlov, P. S.; Dotsev, G. V.; Libman, B. Ya.; Beym, A. I.; Troitskiy, V. N.

ORG: none

TITLE: Preparation of acid chlorides of dithiophosphoric acid. Class 12, No. 184863

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 34-35

TOPIC TAGS: dithiophosphoric acid chloride preparation, alkyl chlorodithiophosphate, aryl chlorodithiophosphate, alcohol, PHOSPHORIC ACID, CHLORIDE

ABSTRACT: In the proposed method, acid chlorides of dithiophosphoric acid

$$\begin{matrix}RO\\R'S\end{matrix}>\underset{\underset{S}{\|}}{P}Cl$$

(where R and R' are an alkyl and an aryl) are obtained by treating alkyl(aryl) chlorodithiophosphates with alcohols or phenols. The reaction is carried out in organic solvents in the presence of an acceptor of HCl, e.g., tertiary amines. Orig. art. has: 1 formula. [WA-50; CBE No. 11]

SUB CODE: 07/ SUBM DATE: 25May65/

UDC: 547.419.1'122'133-312.07

Card 1/1

ACC NR: AP6035832 (A,N) SOURCE CODE: UR/0413/66/000/020/0037/0037

INVENTOR: Bliznyuk, N. K.; Klimov, O. V.; Libman, B. Ya.; Troitskiy, V. N.; Khokhlov, P. S.; Dotsev, G. V.; Kalutskiy, L. A.; Beym, A. I.; Verkhinin, P. V.; Mandel'baum, Ya. A.; Varshavskiy, S. L.; Mel'nikov, N. N.

ORG: none

TITLE: Preparation of derivatives of tri- and tetraphosphoric acids, Class 12, No. 187019

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 37

TOPIC TAGS: ~~physiologically active compound~~, alkyl trithiophosphate, alkyl tetrathiophosphate, phosphate, phosphoric acid, mercaptan, tertiary amine, toxin

ABSTRACT: In the proposed method for the preparation of derivatives of tri- and tetrathiophosphoric acids of the general formula:

$$(RS)_2PXR',$$
$$\|$$
$$S$$

Card 1/2 UDC: 547.419.1.07

ACC NR: AP6035832

(where R is a lower alkyl, R' is a substituted alkyl or aryl, and X is O or S), physiologically active compounds with low toxicity to mammals are obtained by treating dialkyl trithiochlorophosphates with alcohols, mercaptans, or thiophenols in organic solvents in the presence of HCl acceptors, preferably tertiary amines. [PS]

[WA-50; CBE No. 14]

SUB CODE: 07/ SUBM DATE: 26May65

Card 2/2

ACC NR: AM5027749 Monograph UR/ 20

Armand, N. A.; Vvedenskiy, B. A.; Gusyatinskiy, I. A.; Igoshev, I.P.; Kazakov, L. YA.; Kalinin, A. I.; Nazarova, L. G.; Nemirovskiy, A. S.; Prosin, A.V.; Ryskin, E. YA.; Sokolov, A. V.; Tarasov, V.A.; Tashkov, P. S.; Tikhomirov, YU. A.; Troitskiy, V. N. Fedorova, L. V.; Chernyy, F. B.; Shabel'nikov, A. V.; Shirey, R. A.; Shiffrin, YA. S.; Shur, A. A.;;YAkovlev, O. I.; Kolosov, M. A.; Levshin, I. P.; Lomakin, A. N.

Upper tropospheric propagation of ultrashort radio waves (Dal'neye troposfernoye rasprostraneniye ul'trakorotkikh radiovoln) Moscow, Izd-vo "Sovetskoye radio", 1965. 414 p. illus., biblio. 4000 copies printed.

TOPIC TAGS: radio wave propagation, tropospheric radio wave, radio communication, space communication, tropospheric scatter communication, signal processing, signal distortion, field theory

PURPOSE AND COVERAGE: This monograph is intended for specialists working in the field of radiowave propagation, designers of long-distance radio communication systems, and teachers and students of the advanced courses in schools of higher technical education. The monograph contains, for the most part, heretofore unpublished results of Soviet experimental and theoretical investigations in the field of long-distance tropospheric ultrashortwave propagation.

Card 1/10 UDC: 621.371.24

ACC NR: AM5027749

Problems of investigating the troposphere by means of refractometers, the mean level of signals, meteorological conditions and topography, fluctuation of arrival angles and distortions of antenna directivity patterns, losses in antenna gain, and quick and slow fadings of signal levels are discussed. The statistical characteristics of the signals at diversity reception in time, space, frequency and angle as well as the distortion of signals in the communication systems are also investigated. The long-distance propogat- theory is analyzed, and the engineering method of calculating field intensity at long-distance tropospheric propagation is given. At present, there is no theory of Long-Distance Tropospheric Propagation which can be applied effectively enough in practice. Thus, in the investigation of that propagation, considerable attention has to be paid to experiments. The special characteristics of geographical conditions of the territory involved should be taken into consideration during the analysis of experimental data and in their practical application because the conditions of propagation in arctic and tropical climates differ from those existing over seas and continents. A considerable part of the monograph deals with the investigations of long-distance tropospheric propagation carried out over dry land routes, 800 km long, in the central part of the USSR under the general supervision of B. A. Vvedenskiy and A. G. Arenberg (up to 1957). V. I. Siforov investigated problems con-

Card 2/10

ACC NR: AM5027749

nected with distortions and fluctuations of signals. References follow each chapter.

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ACC NR: AM5027749

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ACC NR: AM5027749

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ACC NR: AM5027749

Card 9/10

ARMAND, N.A.; VVEDENSKIY, B.A.; GUSYATINSKIY, I.A.; IGOSHEV, I.P.; KAZAKOV, L.Ya.; KALININ, A.I.; KOLOSOV, M.A.; LEVSHIN, I.P.; LOMAKIN, A.N.; NAZAROVA, L.G.; NEMIROVSKIY, A.S.; PROSIN, A.V.; RYSKIN, E.Ya.; SOKOLOV, A.V.; TARASOV, V.A.; TRASHKOV, P.S.; TIKHOMIROV, Yu.A.; TROITSKIY, V.N.; FEDOROVA, L.V.; CHERNYY, F.B.; SHABEL'NIKOV, A.V.; SHIREY, R.A.; SHIFRIN, Ya.S.; SHUR, A.A.; YAKOVLEV, O.I.; ARENBERG, N.Ya., red.

[Long-distance tropospheric propagation of ultrashort radio waves] Dal'nee troposfernoe rasprostranenie ul'trakorotkikh radiovoln. Moskva, Sovetskoe radio, 1965. 414 p.
(MIRA 18:9)

L 5254-66 EWT(d)/EE(k)-2 RB/WS-2
ACC NR: AP5025643 SOURCE CODE: UR/0106/65/000/010/0001/0008

AUTHOR: Troitskiy, V. N. 44

ORG: none

TITLE: Investigation of attenuations and fadings of microwaves occurring in long open paths [Reported at the 2nd Conference on Microwave Propagation in Mountainous Terrains, Ulan-Ude, Jul 64] 44

SOURCE: Elektrosvyaz'. no. 10, 1965, 1-8

TOPIC TAGS: shf propagation, uhf propagation 4,44

ABSTRACT: A table of the values of attenuation factor computed from various published data covering European measurements on fifteen 71--243-km long radio paths at 7.5--21-cm wavelength is presented. The results of an experimental inveatigation of 16- and 9-cm wave propagation conducted in the Tyan'-Shan' mountainous area in 1958-62 are also reported (a part of these results was published in Rad. i Elektronika, 1960, v. 5, no. 12). Nine 80--245-km paths were explored; the altitude of the test stations varied between a few hundred meters and 4200 m. The median values of the measured attenuation factor are within 3--14.5 db.

Card 1/2

UDC: 621.371.562.1

L 5254-66
ACC NR: AP5025643

2

Signal-level fluctuations, with a period from dozens of seconds to dozens of minutes, were observed on all paths. No clear picture of diurnal variations was obtained. The nature of the fluctuations and the connection between their mean-square deviation and the median attenuation indicate that these phenomena are apparently due to the reflection and diffusion of radio waves in the atmosphere acting as an inhomogeneous medium."In conclusion, the author wishes to thank K. N. Anan'yev for his great help in the experimental work." Orig. art. has: 13 figures and 2 tables.

SUB CODE: EC/ SUBM DATE: 15Sep64/ ORIG REF: 001/ OTH REF: 005

BC

Card 2/2

ANAN'YEV, K.N.; TROITSKIY, V.N.

Experimental study of the diffraction of ultrashort radio waves on mountain ridges. Elektrosviaz' 18 no.10:1-6 O '64.
(MIRA 17:12)

NEVOLIN, N.V.; KASATKIN, D.P.; KIREYCHEV, V.D.; KANDINOV, N.N.; LEVITON, M.Ye.; RTISHCHEVA, V.F.; TROITSKIY, V.N.; DYUKOV, A.I.

Structure of the recent relief of the surface basement of the Russian Platform. Sov.geol. 8 no.2:82-90 F '65.

(MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metod razvedki.

BUDBERG, V.IU.; BLAGODARNYI, N.I.; GORIUNOV, K.D.; TROITSKIY, V.P.; UTKIN, IA.M.

Solid metal forms. Suggested by V.IU.Budberg, N.I.Blagodarnyi K.D.Goriunov, V.P.Troitskii, IA.M.Utkin. Rats.i izobr. predl.v stroi. no.8:29-31 '58. (MIRA 13:3)

1. Po materialam Ministerstva transportnogo stroitel'stva SSSR.
(Concrete construction--Formwork)

KUZNETSOV, G.A., kand.ekonom.nauk; TROITSKIY, V.P., kand.ekonom.nauk

Discussions on land organization at the scientific conference. (MIRA 12:9)
Zemledelie 7 no.7:87 Jl '59.
(Agriculture)

ACC NR: AP6013479 (N) SOURCE CODE: UR/0182/65/000/012/0003/0005

AUTHOR: Okhrimenko, Ya. M.; Nedosekin, L. I.; Faybisovich, L. I.; Troitskiy, V. P.; Birchenko, Ye. P.

ORG: none

TITLE: Forging with preliminary partial cooling of ingot surface

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 12, 1965, 3-5

TOPIC TAGS: metal forging, cooling, hot forging, metal deformation

ABSTRACT: The ingots produced by the present-day steel industry display as a rule various metallurgical defects such as shrinkage cavities, blowholes, internal cracks, etc. Defects of this kind persist in the forgings produced from these ingots, and their prevention can be accomplished by adjusting the regimes and sequence of the swaging, upsetting, drawing and other operations. At present there is no common consensus on the proper sequence and desirability of these operations. Recently, the Japanese investigators Mankichi Tateno and Shoichi Shikano (Closing of Internal Cavities in Heavy Forgings by Hot Free Forging [source not given]) described a new technique, based on the surface cooling of ingots to the temperature

Card 1/2 UDC: 621.73.032

of the lower forging limit and their swaging in this form, which makes it possible to concentrate deformations in the central ingot zone during the forging of large ingots. The cooled outer layers of the ingot then fulfill the role of a more rigid but yielding jacket, while the central layers of the metal, which contain the largest number of discontinuities and have higher temperatures, are effectively deformed by a special press punch, thus leading to the elimination of defects inside the large ingot. However, the Japanese investigators make no mention of the effect of preliminary slight deformation during the partial cooling of the ingot on the distribution of inclusions and the mechanical properties of the metal following the forging. To clarify this question, the present authors investigated ingots of carbon steel 20, which were partially cooled by exposing them to room temperature for 1 hr, after which the temperature difference between the surface and center of the ingot was found to reach ~300°C. In this form of ingots were forged in a 3000-ton press with a reduction of ~6-7% in area, after which they were reheated at 1200°C and subjected to standard forging. Subsequent microstructural examination and mechanical tests of specimens taken from these ingots, as compared with controls, established that the forging of partially cooled ingots indeed provides better conditions for closing up internal defects in the central zone owing to the differences in the deformation resistance of the outer and inner layers of the ingot, and that preliminary deformation enhances this effect by improving the dendritic structure and bringing about a better balance between plasticity and impact strength. Orig. art. has: 4 figures, 1 table.

SUB CODE: 13, 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 003

CHESHIKHIN, German Vasil'yevich; TROITSKIY, V.P.

[Agricultural regional planning and use of lands] Sel'-skaia raionnaia planirovka i ispol'zovanie zemel'. Mo-skva, Ekonomizdat, 1962. 205 p. (MIRA 16:11)
(Agricultural policy)

TROITSKIY, V. S.

PA 64T48

USSR/Electricity Jan/Feb 1948
Oscillographs, Cathode Ray - Applications
Bridges, Electrical Measurement

"The Application of Cathode-Ray Oscillograph for the Balance Indication of Bridges," V. S. Troitskiy, Engr, 8 pp

"Radiotekh" Vol III, No 1

Studies problem of employing cathode ray oscillographs as an indicator in bridge measuring instruments. Gives analysis of conditions necessary for the independent operation of the bridge arms during balancing. Establishes bridge circuits taking into consideration the application of Lamsom's method (H. W. Lamsom, "The Review of Scientific Instruments," 1938 and "The General Radio Experimenter," 1939). On the basis of data obtained from the study of divided construction (of the bridge), a new circuit for coupling the indicator is developed, which method may be used in great variety of bridges, and at the same time fulfill established criteria. Submitted 19 Jun 1947.

64T48

TROITSKIY, V. S. PA 194T72

USSR/Electronics - Signal Measurements Aug 51

"Measurement Theory of Weak Signals Possessing Continuous Spectrum," V. S. Troitskiy, Phys Tech Inst of Gor'kiy State U

"Zhur Tekh Fiz" Vol XXI, No 8, pp 994-1003

Two methods are applied in subject measurements: compensation (cf. S. E. Khaikin and B. M. Chikhachev, "Dok Ak Nauk SSSR" 58, 1947, p 1923) and modulation (cf. R. H. Dicke, Rev Sci Inst, 17, 289, 1946). Investigation of compensation method is subject of this article, although author admits the modulation method to be more advantageous. Author thanks Prof. G. S. Gorelik for advice. Submitted 31 Jan 51. 194T72

(EEA 56, no. 666 : 2623 '53)

TROITSKY, V. S.

*Comparison of the Thermal Noises of Some Materials by a Zero Method. V. S. Troitsky, A. G. Lyubina, and A. V. Zolotov (*Doklady Akad. Nauk S.S.S.R.*, 1951, 80, (4), 583–586).—[In Russian]. Materials used were Nichrome, Cu, Mn, Constantan, W, Ag, Ni, Mo, Fe, graphite, and 1% KCl soln. with Pt electrodes. The results obtained are in agreement with Naiquist's formula $w/4RT = k'$, in which w is the spectral d of the noise, R the resistance of the specimen, and T its temp. The const. k' does not depend on the material or its condition, nor on R or T; this does not agree with the results of Pumper (*ibid.*, 1949, 68, 277; *M.A.*, 20, 827). k' is probably equal to Boltzmann's const.—G. V. E. T.

10/27/54

TROYTSKIY, V. S.

USSR/Physics - Calorimetry; Radio Receivers Mar 52

"Concerning the Sensitivity of Radio Thermometers," V. S. Troytskiy, Physico-Tech Inst, Gor'kiy State U

"Zhur Tekh Fiz" Vol 22, No 3, pp 452-461

Considers the use of "solid-spectrum" radio receivers (compensation or modulation type) for measuring the temperature of objects, i.e., as radio thermometers. Shows that the sensitivity of such a thermometer is in principle unlimited and may be made as high as desired by increasing the Q of the receiver. Credit to Prof G. S. Gorelik. Submitted 10 Sep 51. 244T103

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001756720003-0

TROITSKIY, V. S.

USSR.

Experimental investigation of the [illegible] noises of [illegible] con- [illegible] 62

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001756720003-0"

TROITSKIY, V.S.

Theory of the radio emission of the moon. Astron.zhur. 31 no.6: 511-528 N-D '54. (MLRA 8:1)

1. Fiziko-tekhnicheskiy institut pri Gor'kovskom gosudarstvennom universitete.
(Radio astronomy) (Moon)

TROITSKIY, V. S. and KHAYKIN, S. Ye.

"Radioemission from the Moon and the Nature of Its Surface," paper submitted at the International Astronomical Union Radio Astronomy Symposium, Jodrell Bank, UK, August 1955

A-40421-II

TROITSKIY, V. S., GETMANTSEV, G. G. and STANKEVICH, K. S.

"Detection of Deuterium Monochromatic Radioemission in Waves of 91, 6 cm," paper submitted at the International Astronomical Union Radio Astronomy Symposium, Jodrell Bank, UK, Aug 1955

A-40421-II

222

621.317.794 : 621.396.822

Null Method of measuring Weak Electrical Fluctuations. V. S. Troitski (Zh. tekh. Fiz., March 1955, Vol. 25, No. 3, pp. 478-496.) In this method the [illegible] is used only as a null indicator, hence errors due [illegible] the amplification factor are completely [illegible]

FD-3180

USSR/Physics - Electrical Fluctuations

Card 1/1 Pub. 153-10/21

Author : Troitskiy, V. S.

Title : Fluctuations in a loaded line

Periodical: Zhur. tekh. fiz., 25, No 8 (August), 1955, 1426-1435

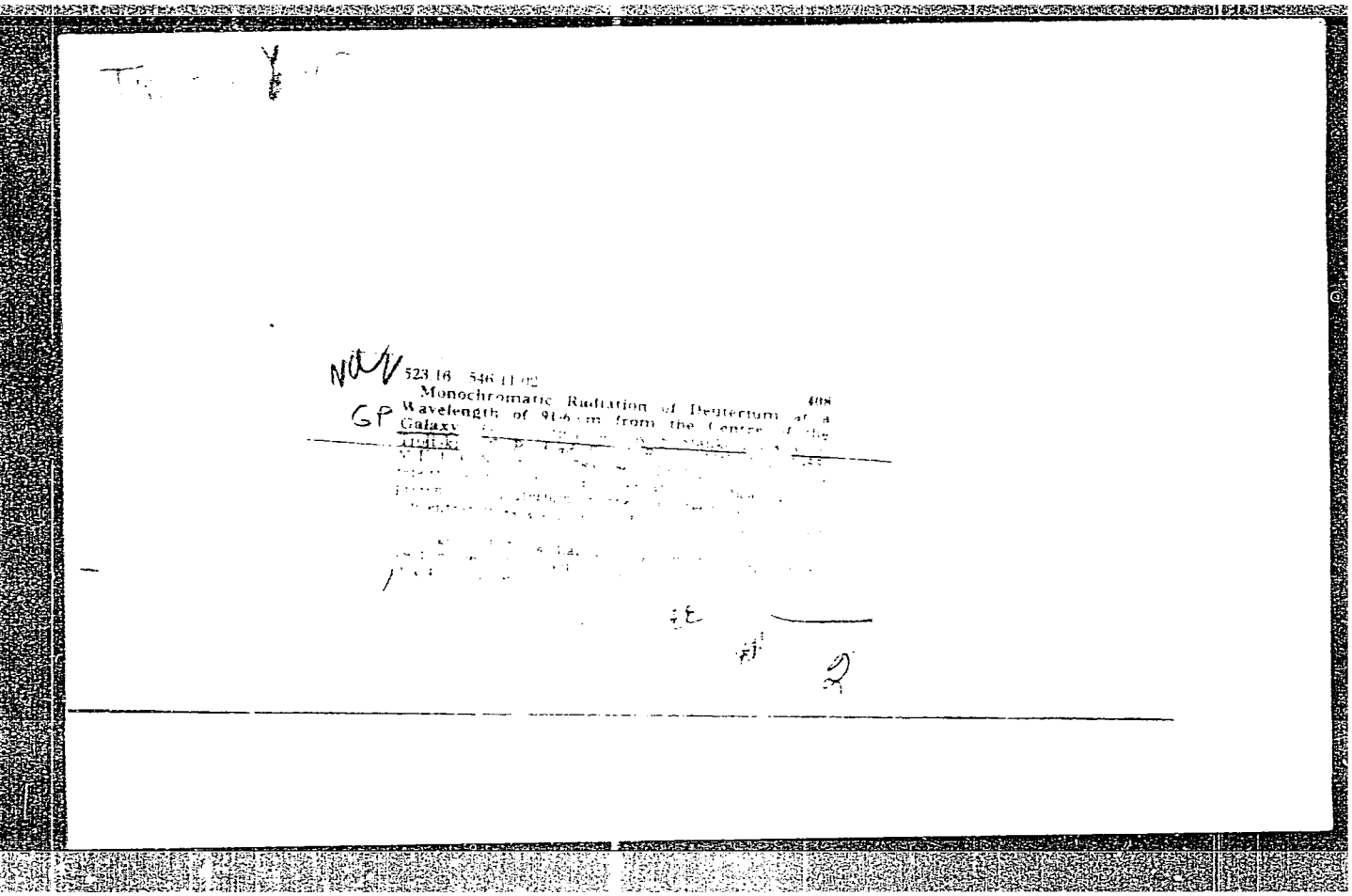
Abstract : The author presents an analysis of the conditions of the measurement of weak noises when the meter input is very noisy. He shows the sources of errors in these measurements and discusses several methods of avoiding them. The spectral density of noises in a loaded line is considered, and an analytical expression for noise at the output is derived which is in close harmony with experimental results. The author then presents a theoretical discussion of the general theory of noise measurements.

Submitted : May 20, 1953

TROITSKIY, V.S.; ZELINSKAYA, M.R.

Determining certain characteristics of surface layers of the moon from its radiowave emission at 3.2 centimeters wavelength. Astron. zhur. 32 no.6:550-554 N-D '55. (MLRA 9:2)

1.Fiziko-tekhnicheskiy institut Gor'kovskogo gosudarstvennogo universiteta.
(Moon--Surface)



Monochromatic Radiation of Deuterium at a
Wavelength of 91.6 cm from the Center of the
Galaxy

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1971

Author : Troitskiy, V.S., Robrik, V.T.
Title : Radio Telescopes of the Gor'kiy Radio Astronomical Station # "Zimenki"

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii, 1955, M., AN SSSR, 1956, 37-79, diskus. 79-80

Abstract : The Gor'kiy radio astronomical station has been operating a radio telescope at 1.5 m since 1949 and radio telescopes at 10 and 3.2 cm since 1950. The 1.5-meter radiotelescope is modulated either by rocking the beam of the directivity pattern, or by switching the receiver input to the equivalent. At a time constant of 3 seconds, the sensitivity reaches 0.6°K relative to the antenna temperature. An in-phase antenna, consisting of 72 vibrators, is used. The radiotelescope is used for systematic observation of radio waves from the sun. The 10-cm radio telescope is modulated by conical rotation of the beam of the antenna directivity pattern. The antenna directive gain is 800. The sensitivity of the radio telescope is 1.8°K relative to the antenna temperature. The main application of this telescope is to investigate radio waves from the sun. The 3.2-cm radio telescope (1952) is modulated with the aid of a waveguide reactance commutator, which switches to input of the receiver from the standard to the measured source. A thermal standard of noise

Card : 1/2
Card : 1/2

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1971

power is used. At a time constant of 10 seconds, the fluctuation sensitivity threshold is 10^{-16} watts. Measures are employed to eliminate parasitic modulation. The instrument was used for precision measurement of radiation streams from the sun, moon, and "radio stars." The antenna used in the 10-cm radio telescope, developed in 1952, is a parabolic mirror 4 m in diameter. Modulation is with the aid of a reactance waveguide switch, and calibration is against a thermal standard. The parasitic modulation is attenuated by using a long line between the switch and the receiver input. The fluctuation threshold of the apparatus, at a time constant of 10 seconds, is 1°K. Bibliography, 20 titles.

Card : 2/2

Card : 2/2

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1974

Author : Zelinskaya, M.R., Troitskiy, V.S.
Title : Procedure for Absolute Measurements of the Radio Temperature of the Sun and the Moon using Centimeter Waves, and Results Obtained at a 3.2 cm Wavelength.

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii, 1955. M., AN SSSR, 1956, 99-105, diskus, 105

Abstract : To measure the effective temperatures of radio-wave sources it is necessary to carry out a temperature calibration of the meter, to measure the attenuation in the antenna feeder, and to determine the directive gain of the antenna. The calibration was performed by switching the input of the meter from the "cold" thermal radio-wave standard (300°K) to a "hot" one (450°K), and then from the cold one to the antenna. The absorption in the antenna system was determined by measuring the intrinsic thermal radio noise of the feeder and of the antenna aimed at the zenith. The antenna used to measure radio temperature of the sun T_{as}, averaged over the disk, was a pyramidal horn, the directive gain of which was calculated. Measurements made at 3.2 cm in January-February 1955 gave a value of 13,000 $\pm$ 800°K. A parabolic mirror 4 m in diameter was used to measure the average radio temperature T_{am} of the moon. The width of the directivity pattern of this antenna is comparable with the

Card : 1/2

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1974

dimensions of the moon. An experimental measurement was therefore made of the transfer coefficient between T_{am} and the directly-measurement antenna-temperature increment occuring when the antenna is aimed at the moon. Radio waves from the sun, measured simultaneously with the antenna under investigation and with the standard horn, were used for this purpose. The measurements performed according to the described procedure showed that the moon's radio temperature at 3.2 cm is independent of the phase with an accuracy to $\pm 5\%$. Its constant component is $T_{am} = 183^{\circ}K \pm 13^{\circ}K$.

Card : 2/2

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 1984
Inst : Leningrad University
Author : Troitskiy, V.S., Zelinskaya, M.R., Rakhlin, V.L., Bobrik, V.T.
Title : Results of Observation of Radio Waves from the Sun at 3.2 cm and 10 cm During the Total Solar Eclipses of 25 February 1952 and 30 June 1954.

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii. 1955, M., AN SSSR, 1956, 182-196, diskus. 196-202

Abstract : In 1952 the observations were made at the Archman Station at wavelengths of 3.2 and 10 cm; in 1954 the observations were made near Gor'kiy at 1.5 meters and in Novomoskovsk at 3.2 and 10 cm. Measurements of the radiation, made before and after the eclipse, made it possible to estimate the sun's temperature during the day of the eclipse. In February 1952 the effective temperature was 50,000°K at 10 cm and 12,400°K at 3.2 cm. In June 1954 the effective temperature was 43,000°K at 10 cm and 11,000 at 3.2 cm. From the values obtained for the residual intensity in the total phase, it was possible to obtain the effective radii of the sun (in optical radii), namely 1.06R and 1.04R at 3.2 cm and 1.2R and 1.07R at 10 cm for 1952 and 1954 respectively. These results indicate that the chromosphere in the corona was more compressed in 1954 than in 1952, and may be a manifestation of the cyclic change in solar activity. The level causing the 10-cm radiation was reduced more (by 1.8 times) than the

Card : 1/2

level responsible for the 3.2-cm radiation (by 1.5 times). Comparison of the 1952 eclipse curves with calculations has shown that no increase in brightness is observed at the edge of the disk at 3.2 cm, and that at 10 cm there exists a ring radiating at an intensity 1.5-2 times greater than the average value. Observations show that protruberances are radiated at 3.2 and 10cm and that in addition there are sites of increased radiation with an effective temperature of 100,000 and 400,000°K at 3.2 and 10 cm respectively and measuring 1'--2'. The article contains also many methodical indications on the performance of observations in the centimeter range.

During the discussions, A.P. Molchanov, in the name of a group of his associates at the Leningrad University, reported observations made by him on radio waves from the sun at 3.2 cm during the 1952 and 1954 eclipses. He concludes from these results that an increase in brightness is observed at 3.2 cm at the edge of the solar disk. Bibliography, 14 titles.

TROITSKIY, V. S.

I-12

Category : USSR/Radiophysics - Application of radiophyiscal methods

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 2007

Author : Getmantsev, G.G., Stankevich, K.S., Troitskiy, V.S.
Title : Monochromatic 91.6-cm Deuterium Radio Waves from the Center of the Galaxy.

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii. 1955, M., AN SSSR, 1956, 539-545

Abstract : See Ref. Zhur. Fiz., 1956, 20669

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TROITSKIY, V.S.

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USSR / Radiophysics

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9937

Author : Troitskiy, V.S.
Inst : Not given
Title : Radio Astronomical Methods of Antenna Investigation

Orig Per : Radiotekhn. i elektronika, 1956, 1, No 5, 601-612

Abstract : The author considers the conditions and methods for determining the losses, the directivity coefficient, and the directivity pattern of antennas with the aid of extraterrestrial radiation, and also measurements of antenna losses using their intrinsic thermal noise. From the general relations of the theory of thermal radiation and of the theory of antennas, the author derives expressions for the noise temperature of the antenna, due both to the external radial radiations, as well as to the intrinsic radiation of the antenna and of the connecting feeder, arising as a re-

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USSR / Radiophysics

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9937

Abstract : it is shown that the application of this method is possible in the decimeter and centimeter wave band. At longer wavelengths, measurements become difficult because of the presence of radiation from the galaxy, while at shorter waves (millimeter waves) the complications arise because of radiation from the earth's atmosphere. Results of the determination of losses in a two-slot radiator at 3.2 cm show that these losses amount to 40 -- 50%.

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